

REMARKS

Claims 1-16 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

DRAWINGS

Applicants have attached a revised drawing for the Examiner's approval. In the "Replacement Sheet", walls 104a and 104b are now properly labeled.

SPECIFICATION

Applicants have amended the specification to address an informality discovered during the course of preparing this response. Therefore, favorable consideration is respectfully requested.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ng et al. (U.S. Pat. No. 6,162,171). This rejection is respectfully traversed.

With reference to the '171 Patent, Ng teaches a robotic endoscope having: "(a) a plurality of segments, connected together by a plurality of flexible articulated joints, having a distal end; (b) a plurality of flexible linear actuators attached, skewed sideways with respect to the longitudinal axis of said robot, circumferentially round each segment. . . ." As is clearly stated in the text of Ng, the "flexible articulated joint" 3 is a passive joint that is capable of flexing in response to a driving motion. This driving motion is

produced by "a plurality of flexible linear actuators attached, skewed sideways . . . circumferentially round each segment". In other words, the actuators do not interconnect adjacent segments to each other, but rather engage the walls of the tubular organ and serve to drive the endoscope. This arrangement is clearly illustrated in FIG. 3 of Ng, which shows the passive joint 3 and the hollow bellows 11 coupled at one end to the segment 2 but engage the organ wall at the other end. Ng is completely silent with regard to connecting adjacent segments together using bellows-type actuators.

Contrary to this, Applicants teach an apparatus for traversing obstacles that includes an elongated, round, flexible body that further includes a plurality of segments interconnected by an integrated joint actuator assembly. The integrated joint actuator assembly includes a plurality of bellows-type actuators individually coupling adjacent segments to permit pivotal actuation of the apparatus therebetween. A controller is employed to maintain proper positional control and stiffness control. The present claims include limitations that the plurality of bellows-type actuators interconnect adjacent segments and are used to manipulate the "robot". Specifically, independent Claims 1 includes "an integrated joint actuator assembly having a plurality of bellows-type actuators individually interconnecting at least a portion of said segments, each of said plurality of bellows-type actuators extending only between said first wall of a first of said plurality of segments and said second wall of a second of said plurality of segments." As can be seen, integrated joint actuator assembly includes a plurality of bellows-type actuators. These actuators extend only between walls 104a and 104b. Likewise, independent Claim 10 includes "an integrated joint actuator assembly having a plurality of bellows-type actuators individually interconnecting at least two of said segments." As

is clear, Ng is completely silent with regard to interconnecting bellows-type actuators between adjacent segments to provide enhanced maneuverability. The actuators of Ng are used as a drive mechanism, not an "integrated joint actuator assembly." Reconsideration and withdrawal of the present rejection is respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: SEPT 7, 2004

By: JLS
Stanley M. Erjavac, Reg. No. 38,442
Jeffrey L. Snyder, Reg. No. 43,141

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

JLS/smb

AMENDMENTS TO THE DRAWINGS

The attached "Replacement Sheet" of drawings includes changes to FIG. 3. The attached "Replacement Sheet," which include FIG. 3, replaces the original sheet including FIG. 3.